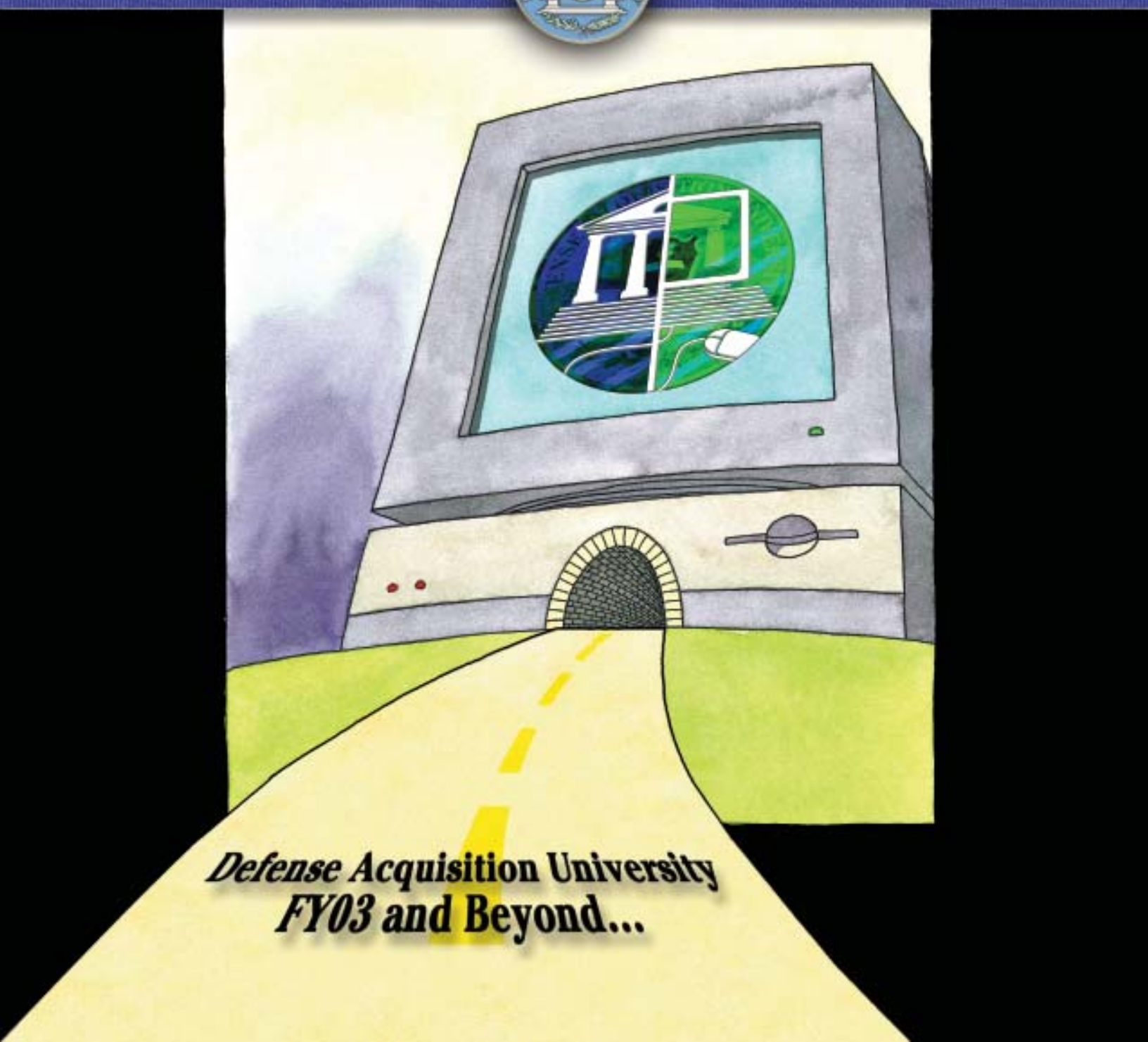
The Defense Acquisition University
Strategic Plan 2002-2009
Training Transformation (T2)

The DAU Road Map for e-Learning and Online Performance Support



Frank J. Anderson, Jr.
President
Defense Acquisition University

"Technology has fundamentally changed the way we live and work. DoD is committed to moving to an e-Business environment. Our goal is to facilitate this business transformation by training the way we will work — 'e-Learning to support e-Business.' We must accelerate the DoD training transformation, and smartly applying technology will facilitate this journey into the future."

— Frank. J. Anderson, Jr.

"An immense and ever-increasing wealth of knowledge is scattered about the world today; knowledge that would probably suffice to solve all the mighty difficulties of our age, but it is dispersed and unorganized. We need a sort of mutual clearinghouse; a depot where knowledge and ideas are received, sorted, summarized, digested, clarified and improved."

— H.G. Wells (1940)

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"Shifting to e-Learning when appropriate is critical to the success of our workforce. Not only does it allow for relevant, innovative approaches that open new worlds, but it will ensure that today's learners can be productive members of tomorrow's workforce."

— Richard Reed

Prepared by the Defense Acquisition University

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A Technological Road Map for e-Success — Stepping into the Future of e-Learning

The mission of the Defense Acquisition University (DAU) is to provide practitioner training and services to enable the Acquisition, Technology, and Logistics community to make smart business decisions and deliver timely and affordable capabilities to the warfighter. We achieve our mission by delivering certification training, performance support, and continuous learning. The application of technology provides for convenient, cost-effective access to education, training, performance support, and expert advice to all members of the Department of Defense (DoD) AT&L community.

DAU has identified three requirements for expanding the use of technology-based learning:

- Certification training and career advancement training
- Performance Support and continuous learning
- Knowledge dissemination and online just-in-time support

Our goal is to form a continuous-learning enterprise with "just-in-time" training and knowledge management. We will provide modern, technology-driven education and training and high-quality lifetime educational opportunities to ensure the competency and readiness of the AT&L Workforce.

We will take advantage of the efficiencies realized through process reengineering to support ongoing curriculum modernization.

Energizing Our Strategic Planning Process

This document will expand the reader's knowledge of the broader context within which the University shapes its future. This road map description also provides a framework for integrating and achieving DoD AT&L's and DAU's institutional goals. Above all, this is a living document, not a static, concrete blueprint. In all phases of planning, DAU will be responsive to changing internal strengths and weaknesses, as well as external opportunities.

Other DoD agencies' strategic and implementation plans supplement the DAU road map. These plans complete our strategic picture and portray the interrelationship among the components of DoD and our University. Our e-Learning road map supports the DAU goal to become a leading corporate university, with emphasis on quality, a shared understanding of institutional and faculty focus, and a receptivity to change. Our plan empha-

e-Learning refers to an umbrella set of Internet technologies to deliver a broad array of solutions that enhance knowledge and performance.

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DAU President

In keeping with our Smart Business 20/20 plan, our current key requirements are to:

1. Enhance Workforce readiness
2. Train to the standard
3. Exploit technology
4. Accelerate courseware redesign
5. Demonstrate a return on investment
6. Change cultural paradigms
7. Incorporate training to support DAU transformation
8. Support DoD Advanced Distributed Learning (ADL) and Acquisition Knowledge Management System (AKMS) initiatives

sizes the importance of building our major strengths as a university, dedicated to educational and outreach programs of exceptional quality. At the same time, major emphasis is placed on significantly enhancing our role as a learner-oriented university.

e-Learning: Greater Effectiveness and Training Efficiency

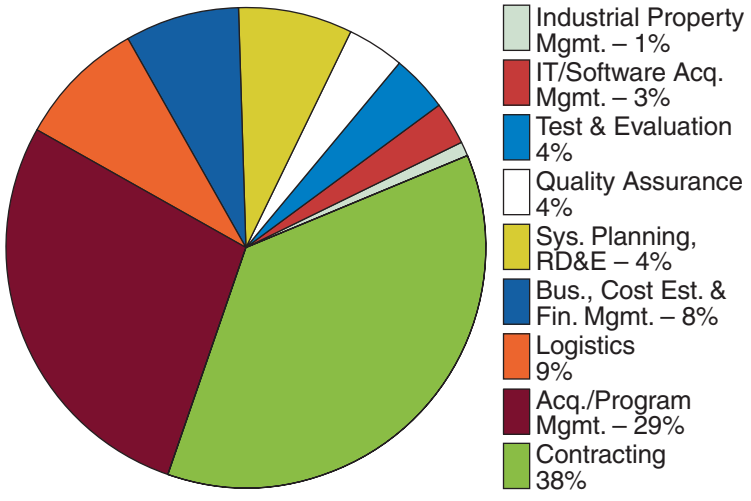
Education is a huge business. Educational spending in the United States alone is projected to be $815 billion and over $2 trillion worldwide. Adult corporate universities make up about 12 percent of the total educational spending or about $85 billion. More money is spent on education than the State Department and Defense Department budgets combined. It is 9 percent of the gross domestic product and is the second largest expenditure category in the United States after healthcare. In 1998, 700,000 American students enrolled in e-Learning courses, and over 2,000,000 are projected for the coming year.

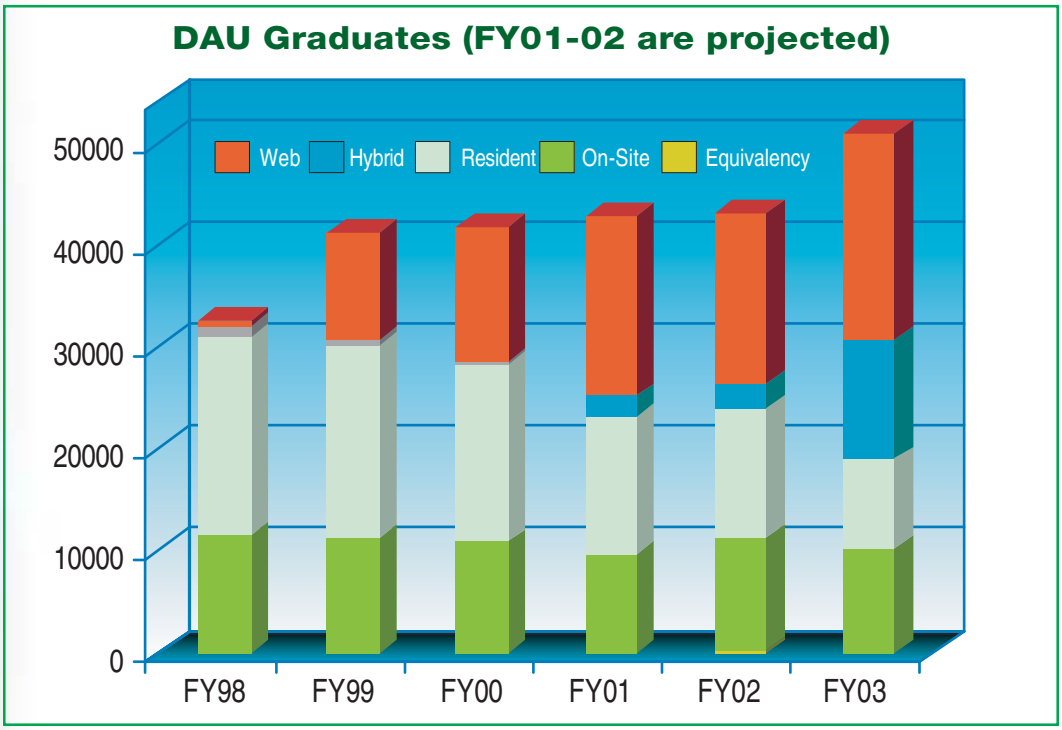
Worldwide, 11 virtual universities have enrollments of over 100,000 students. Their aggregate budgets are about $900 million for 2.8 million students. This breaks down to $320 per student. Compare this to the traditional higher education system in the United States, with over 3,500 degree-granting institutions serving 14 million students on capital-intensive campuses, spending $199 billion. This represents an average cost of $14,200 per student.

These numbers illustrate that the dramatic shift to technology-based education is not a fad but rather a stampede to accommodate the diverse needs of working adults. Over the decades, education and training have transformed from a predominantly industrial environment to a primarily network-centric environment with measurable benefits.

Nearly 300 studies show that the shift away from classroom training to technology-driven, individualized environments produces better test scores in more than 98 percent of students. As an

Percent of Students by Course Type Attended





added bonus, additional research shows that using technology-based instruction reduces cost of instruction by about one-third. Furthermore, such use either reduces instruction time by a third, or it increases effectiveness by a like amount.

Who are Our Students?

In FY98, only 2 percent of DAU graduates attended distributed-learning classes. Three years later, at the end of FY02 that number will increase to 40 percent. Online instructional time has increased from 15,570 hours in FY98 to 1.5 million hours in FY03 — a gigantic 83-fold increase. This trend is expected to continue. Classroom use will continue to drop in the next three years, predictably slipping from 74 percent to about 64 percent by the end of 2002.

This trend closely tracks the findings of the "ASTD State of the Industry Report." This shift is driven by the rising demand for "just-in-time" accessibility to learning, as well as a workforce that is accustomed to the self-service convenience of e-Trade, Amazon.com, and more.

Who is an e-Learner?

The typical American e-learner is a male (57 percent), about 43 years old (median age), married (60 percent), and with an average annual household income between $50–75K. They "log on" between 31–40 hours per year for mandatory work-related training. Likewise, the typical DAU student is male (63 percent), about 42 years old (ages range from 19–80), and earns between $60–79K (GS-13). The projected DAU current enrollment for FY03 is 57,171 students, and it provides direct support to 14 career fields.

Trends in Learning and Technology During the 2000s

Making predictions for the coming years presents a major challenge because the rate of technological

Who Are Our Future Learners? — aka "Kids Say the Darndest Things"

According to a 2001 study from Knowledge Networks/Statistical Research (KN/SRI), fully one-third of children ages 8-17 say the Internet is the medium they would choose if they could have only one, topping television, phones and radio.

e-Learning administrators have a broad definition of what e-Learning is.

- 81 percent offer online courses
- 45 percent use technology for online management
- 41 percent say they collaborate virtually or work in a virtual team
- 35 percent use electronic performance support systems

Source: "State of the Industry 2001" Online Learning Magazine and International Data Corp.

change and innovation is based on weeks or a few months, not years. However, the following are our predictions for the New Millennium:

1. Communities of Practice. The next few years will have increasing numbers of Communities of Practice (CoPs) in the DoD workplace, perhaps numbering 4 – 5,000.

2. Portals. A portal is the name for a single, unified site that brings together a wide range of learning resources for the use of learners. If we add portals to the CoPs' framework, we have a dynamic mechanism for collaboration and learning.

3. Enterprise Learning and Knowledge Systems. DAU will focus on the need to manage the information side of learning and the link to knowledge management systems. A large level of DAU investment will be focused on integrating this technology and supporting the development of the DoD Acquisition Knowledge Management System (AKMS).

4. Content. The coming few years will focus on content and delivery by a variety of technology, from the desktop computer to the laptop and handheld devices. The portal concept will fuel the demand for comprehensive catalogs of content residing in digital repositories and future learning object repositories.

Yogi Berra once said, "When you come to the fork in the road, take it." At DAU, whether we take the left or the right fork, it leads us toward the fusion between knowledge management and e-Learning. Successful fusion will yield the desired e-Learning ADL architecture.

Managing Costs for ROI

- Reduce vendors and other direct costs
- Reduce staff, overhead
- Reduce travel costs
- Eliminate lost or wasted time/effort
- Recoup lost productivity to the workforce
- Recapitalize investment in human capital

The Continued Transformation of e-Learning

The Need for e-Learning

A consensus prevails among educators, policymakers and citizens that current traditional practices are not delivering the skills that the government workforce will need to thrive in the Internet Age. As part of our efforts at transforming education at DAU, we are concentrating on applying technology's resources to develop the full academic abilities of all our students, current and past. We believe that only through an integrated approach of e-Learning will our University — operating under distinctive circumstances, opportunities and constraints — fully utilize technology in all forms to promote learner achievement and develop essential skills.

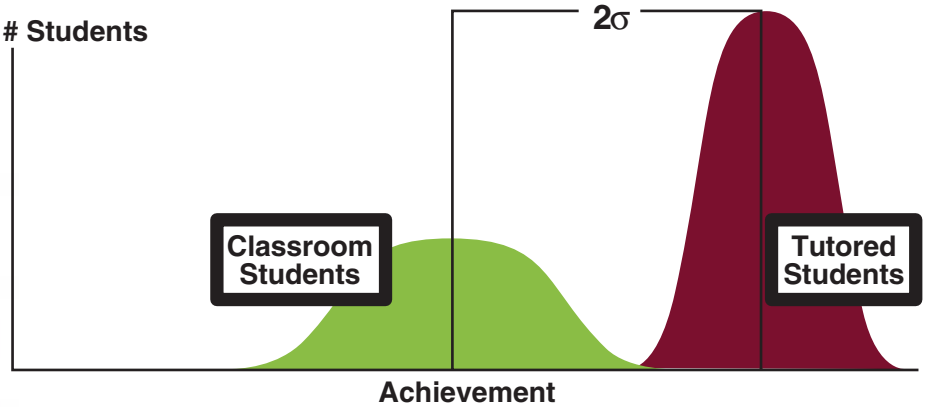
We must make the necessary adjustments and shifts in culture to ensure that we continue to be the premier DoD e-learning environment. Adopting this integrated approach addresses the problems facing adult education and can improve learner performance.

To date, we have placed so much emphasis on hardware, connectivity and standards that our learner base has not yet begun to realize the full potential of e-Learning. We have also tended to discuss those components separately, when they must be seamlessly integrated to be most effective. Therefore, using this e-Learning Road Map, we will advance our efforts to integrate digital content into

The continued success and quality of education depends on our collective ability to close the gap between technology's mere presence and its effective integration into the curriculum to enhance student performance and deliver the skills necessary for the Internet age. DAU believes that the solution begins with e-Learning.

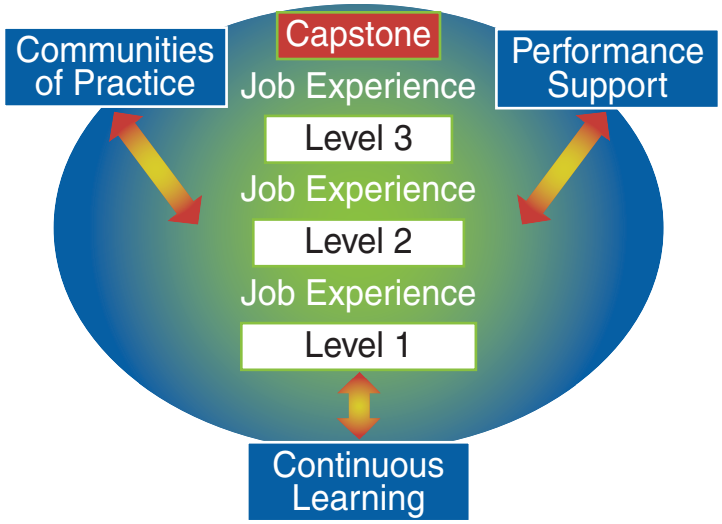
Individualized Versus Classroom-Based Instruction

ON AVERAGE, TUTORED STUDENTS SCORE BETTER THAN 98% OF CLASSROOM STUDENTS – A 2-SIGMA SHIFT



Adapted From: Bloom, B.S. The Two Sigma Problem: The Search for Methods of Group Instruction as Effective as One-to-One Tutoring. Educational Researcher. 13, 4-16 (1984)

The Performance Learning Model (PLM)



The Power and Transformation of e-Learning

e-Learning is the educational approach that integrates technology, connectivity, content and human capital. When implemented correctly, it builds on the unique, dynamic characteristics of digital content to create productive and engaging environments.

Digital Content can be:

- Randomly accessed
- Relevant, up-to-date and authentic
- Explored on many levels
- Interactive and engaging
- Manipulated
- Instantaneous
- Creative

Learning becomes:

- Case-based
- Learner-centric
- Collaborative
- Customized
- Communicative
- Productive
- Lifelong at anytime, from anywhere

Internet Age Skills:

- Demonstrate technological literacy
- Communicate using a variety of media
- Access and exchange information
- Compile, organize and synthesize
- Draw conclusions and make generalizations
- Know content and locate information
- Become self-directed learners
- Collaborate and cooperate in teams
- Interact in ethical ways

the DAU curriculum to ensure we apply these powerful tools in creative ways that enhance learning.

We recognize that our efforts to promote e-Learning exist in an educational climate in which teachers, by necessity, focus on accountability structures. This complicates the ability to implement e-Learning. However, e-Learning is critical if we are dedicated to preparing students in the AT&L workforce with the necessary technology and critical thinking skills. We must extend accountability to the digital environment and link digital content and learning processes to student performance standards.

e-Learning Develops Internet Age Skills

Not only does e-Learning make education more engaging and relevant, it also develops the skills necessary for learners to succeed in life and work. e-Learning does not change the fundamental purposes of education. However, in the dynamic Defense Department environment, the shifting objectives of DoD and the needs of DAU learners demand a corresponding adaptation within our educational environment. In this Internet Age, technology dramatically alters the options for inquiry, analysis and expression. Today, the ability to find information quickly and efficiently, manipulate it, apply it to solve problems and make informed decisions has become a primary asset. We have long held that the ability to learn is a precursor to success. Relying solely on traditional educational environments and methods is not preparing students to thrive in today's society,

Internet Age Skills Desired in the AT&L Workforce

DAU is dedicated to providing the skill sets that members of the AT&L workforce will need in the Internet Age. Some of these skills are:

- The ability to communicate information and ideas using a variety of media and formats;
- The ability to be proficient in the use of technology;
- The ability to access, exchange, compile, organize, analyze and synthesize information;
- The ability to draw conclusions and make generalizations based on information gathered;
- The ability to know content and be able to locate additional information as needed;
- The ability to evaluate information and sources;
- The ability to construct, produce and publish content and other research;
- The ability to become self-directed learners;
- The ability to collaborate and cooperate in team efforts;
- The ability to solve problems and make informed decisions; and,
- The ability to interact with others in ethical and appropriate ways.

nor does it train them to prosper in tomorrow's AT&L workplace.

Since 1998, DAU has focused on providing a new set of skills necessary to prepare learners for work in a world moving from the industrial age to the digital age. The necessary knowledge identified by the United States Secretary of Labor's Commission on Achieving Necessary Skills (SCANS) includes five workplace competencies and a three-part foundation of skills and personal qualities necessary for solid job performance. These competencies are: the ability to use resources productively, master interpersonal skills, locate and manipulate information, understand systems thinking and operate technologies. DAU recognizes that the foundation for those skills lies with learning how to learn.

In the Internet Age, DAU learners will need to navigate technology's tools, interact with others in team-based projects, understand complex systems, and conduct a dialogue with peers and experts in order to take advantage of opportunities. DAU is teaching those skills through the e-Learning process.

Furthering the e-Learning Environment

DAU strongly believes that an integrated approach to e-Learning is essential if we are dedicated to inspiring individuals in the AT&L workforce to be lifelong learners and preparing them for life and work. But in order to achieve e-learning, DAU must increase its commitment and make necessary readjustments to truly integrate digital content into the learning process.

Models from the Business Community

As in corporate America, there are distinct cycles for the integration of technology into education. Researchers have defined a four-stage cycle of technology integration, which applies to the DAU educational environment,

Adult Learning Model - Blended Learning

- **Prepare Me**
  - Announcements, newsletters, meetings
  - Online bulletins, pre-reading
  - Live, online intro-sessions
- **Tell Me**
  - Classroom presentations
  - Live, online e-Learning events
  - Just-in-time e-Learning courses
- **Show Me**
  - Instructor live demonstrations
  - Recorded demonstrations
  - Just-in-time e-Learning
- **Let Me**
  - One-on-one coaching
  - Simulations and games
  - Exercises and tests
- **Help Me**
  - On the job access to support
  - Job aids
  - Help desk
  - Online performance support

Cycles of Technology Integration

1. **Planning, Investigation and Experimentation**
   DAU went through an initial stage of planning and experimenting in which a few educators begin using technology in new ways and become technology proponents.
2. **Initial Capital Investments**
   Once DAU was convinced of the value of educational technology, initial investments are made to bring technology into the University.
3. **Readjustment**
   As DAU educators became increasingly comfortable with technology and its potential, they expanded the scope of activities that utilized technology. Now, DAU must continue to readjust investments in learning, expectations, and teaching methodologies to take advantage of the expansive resources technology makes available to improve performance and achieve concrete educational objectives.
4. **The Emergence of New Work and Organizational Models**
   e-Learning has become an essential tool for DAU students and educators. It allows the flexibility to create new forms of collaborative and inquiry-based learning and, at the same time, improves academic performance.

shown above. As a result of our continued progress, DAU has reached the readjustment phase, a critical juncture where we have begun to expand the scope of activities in order to maximize the benefits of technology.

Readjustment: Expanding the Scope of Technology Integration

In this stage, DAU is adjusting its investments, expectations and teaching methods to include the expansive resources ADL technology makes available to improve student performance.

DAU has reexamined and reorganized its structures and educational incentives to ensure that its processes and teaching methods support AT&L educational goals and objectives. Our educational standards must be extended into the digital environment as well. And our faculty must be empowered to expand the scope of technology in teaching and learning. As a university, DAU has developed an adequate technological infrastructure and is committed to the vision of ADL and e-Learning. DAU is continuing to develop and offer professional development courses and continuous learning modules that support the integration of digital content into the DAU curriculum.

Critical Importance of Professional Development

Professional development remains a key issue to creating a premier e-Learning environment. Specifically, DAU has shown that professional development that guides faculty on the effective integration of digital content and tools, rather than just offering technical know-how, proves particularly successful.

"Innovation is change that creates a new dimension of performance."

—Peter Drucker

FY03 - Strategies in a Year of Digital Content

A crucial component to achieving the goals of the DoD ADL Initiative and our e-Learning success is increasing the integration of digital content, ensuring that it is included in each of our educational strategies and available to our learners. When applied by skilled faculty with clear educational objectives, dynamic digital content allows for increased levels of exploration and inquiry that make e-Learning possible.

DAU cannot afford to be complacent. Through our outreach and communications programs, we urge our strategic and academic partners, industry leaders and the larger federal community to join with us in embracing the ADL Initiative to ensure that AT&L learners receive the full benefits of educational technology.

In our first two years of developing e-Learning courseware, DAU concentrated on the critical issue of hardware and connectivity. In FY01, we offered recommendations for effective professional development that supported the integration of e-Learning. In FY02, with the introduction of the Shared Content Reference Model (SCORM), we began the implementation of those ADL recommendations.

Now we have the standardized software tools in which we can achieve reusability and improve our investment in learning, both in and out of the DAU Virtual Learning Center. DAU's investment in education technology cannot stop with hardware, software and network connections. Our goal is to make FY03 the dawn of digital content at DAU. With this new energy, we will create the learning environments that develop needed Internet Age skills. We will integrate digital content at every level, to promote better educational experiences in ways that help our workforce learn, on the job and off.

We will expand our strategies to recognize the breadth of digital content and to integrate digital content so that it becomes widely used and available. If used effectively, digital content creates unique opportunities to achieve educational objectives and produce the dynamic, learner-centered and productive learning environments that support the development of Internet Age skills. Initial research indicates that when correctly applied, ADL technology can have a positive effect on student learning and performance support, particularly in honing higher order thinking skills.

In order to be effective, our educational strategies and metrics for evaluation must be clear.

Digital Content

Digital content is the digitized multimedia material that calls upon students to seek and manipulate information in collaborative, creative and engaging ways that make digital learning possible. It includes video on demand, software, CD-ROMs, websites, e-mail, online learning management systems, computer simulations, streamed discussions, data files, databases and audio.

Digital content is critical to digital learning because it can be:

- Relevant, up-to-date and authentic
- Explored on many levels
- Manipulated
- Instantaneous
- Creative

Steps to Integrate Digital Content Effectively

1 Identify Educational Goals and Link Digital Content to those Strategies

Digital content offers a powerful arsenal of tools to educators and learners. However, ADL technology is not a panacea and can only improve and increase learning when applied to meet specific educational goals and strategies.

DAU has examined our educational goals and determined which ones will be supported by digital content. Educational strategies that cross disciplines, incorporate problem-solving and support student-generated products lend themselves to digital content. This is true of all of our strategies. Of course, DAU has been meeting our goals with traditional instruction for many years. However, digital content can now be incorporated to make learning more engaging, enticing and empowering, and to allow greater levels of inquiry and investigation.

DAU has revisited its curriculum and recognizes the need to integrate digital content and performance support tools in each of our strategies in order to realize educational objectives.

DAU believes that each successful strategy in this overarching road map must use 3 formative steps.

1. Identify our educational goals and link digital content to strategies that fulfill those objectives;
2. Select the student outcomes and performance standards that will be achieved through the use of digital content; and,
3. Measure and evaluate indicators of success and ways of measuring our progress at regular intervals.

This is a process that will be revisited continuously during the coming years.

DAU Strategies:

1. Develop an organization/process that provides learner-focused services, delivery modes, and risk management feedback mechanisms (a 2-year strategy).

DAU encourages the cultural metamorphosis of our organizational structure and instructional mentality along learner performance support lines rather than course lines. In FY02, DAU heightened its emphasis on well-planned online fundamental course offerings, blended intermediate courses consisting of both resident and online curricula, and case-based advanced offerings.

As a result of our lessons learned, DAU has found that best practice e-learner centricity contains 4 factors:

- Good Content and Course Mandate;
- Intuitive User-Friendly Navigation;
- Predictive Student Behavior; and,
- Speed.

Properly managing these factors will lead to a positive web-based learner experience.

DAU continues to place emphasis on assessment and reporting at all levels, predicting both successes and where curricula may need reshaping. DAU is also redesigning its delivery approach through an improved learning management system (LMS) and alternative networks to overcome the effects of insufficient bandwidth, as some students use low-speed modems from their home connections.

The learner-centric cultural shift is exemplified by the "Acquisition Support Center" (ASCr). This form of a "Learner Concierge" will have a significant online presence for both active and alumni learners. Not only can DAU faculty and staff offer assistance with problems, but they can also help with Deskbook 2002 searches and questions, assist with maintaining the ASCr portal content, interact with learners over course questions, and bring a heightened sense of community to our Workforce. The Center will not only be a test bed for new technology and courseware, but it will also bring added functionality to our academic universe. The ASCr will also provide a bridge to a new DoD AT&L Knowledge Sharing System that will rise out of the transformation of the present Defense Acquisition Deskbook.

Strategy Measurement
In evaluating the effectiveness of this strategy we will use the following analytical metrics:

- The types of services provided;
- The trends in Help Desk calls;
- The types of knowledge products provided;
- The number of participating faculty;
- Traffic volume reporting; and,
- Click stream analysis of usage patterns and content delivery.

2. Cultivate faculty and administrative interest in the e-Learning professional development (an ongoing strategy).

The roles and responsibilities of learners, instructors and managers change in a learner-centric environment. Traditional instructors and professors are still needed, but so are facilitators, mentors and subject matter experts. All play a part in interacting with DAU learners — to tutor, coach, monitor, manage and provide assistance so they will learn new skills and knowledge. Experience has taught DAU that online teachers spend more time in student interactions than they did when teaching using a traditional classroom method of instruction.

There is an unprecedented need for professional development in the area of online instructor training. It is now recognized that there must be a shift in the way instructors are trained and supported, corresponding to the shift from instructor-led to learner-centric instruction. If we are to gain the full benefits of online instruction, a significant change in the preparation of instructors is required. The lessons from education are that online learning is an entirely new type of educational experience requiring a redesign of instructor roles, responsibilities, and commitments as well as support and training for those teaching online.

Strategy Measurement
In evaluating this strategy's effectiveness, we will examine several metrics, such as the number of faculty that participate in professional development courses, e.g., the Basic SCORM 101 course offered in February 2002 where 48 faculty and staff attended.

3. Develop and maintain a competency certificate program for online instructors (a 2-year strategy).

DAU will manage the development of a self-paced, academically oriented, online training program for DAU instructors who are tasked with the responsibility to facilitate, link, assess and manage e-Learning. With the advent and widespread acceptance of the ADL Initiative, a growing distance learning community is searching for methods for preparing instructors to succeed in teaching, supporting and communicating with online learners. Among the outcomes from the project will be a body of digital content that will become part of the product of the ADL Initiative. The project will produce modular shared content objects (SCOs) that will bring full cycle the smart business practice of reusability.

Strategy Measurement
In evaluating the effectiveness of this strategy we will look at the progress we make in developing a new certifi-

2 Select the Student Outcomes and Performance Standards that will be Achieved by Digital Content

Our stakeholders determine our educational standards and DAU is mandated to implement a curriculum to accomplish those standards. We believe these curriculum standards and guidelines apply to digital content as well. Without clear performance outcomes and standards, even the best educational goals will be difficult to measure, assess and report.

"About one-third of all our internal training will be done this year via distributed learning, with savings and productivity gains of $100 Million."

—Lou Gerstner CEO, IBM

3 Measure and Evaluate Outcomes Against Standards and Adjust Accordingly

As DAU has begun integrating digital content into the curriculum, we are beginning to measure and evaluate outcomes and make adjustments, just as we would with non-digital material and techniques. DAU is using clear standards, benchmarking and regular data-driven indicators of educational improvements to evaluate performance and target areas for improvement and readjustment.

cate program to train online instructors. This will include how many instructors enroll in the certification program in FY03, versus how many actually complete the 60-hour training program.

4. Support for American Council on Education (ACE) Accreditation /Continuing Education Units (CEUs) (an ongoing strategy).

Courses that go through a conversion to distance learning must be revalidated for both ACE-recommended college credit and CEUs. DAU will continue to work with ACE regarding any revisions to any credit-bearing course. When a course is going through an "online" conversion, ACE reviews will be conducted as early as possible in the course-development stage.

Strategy Measurement

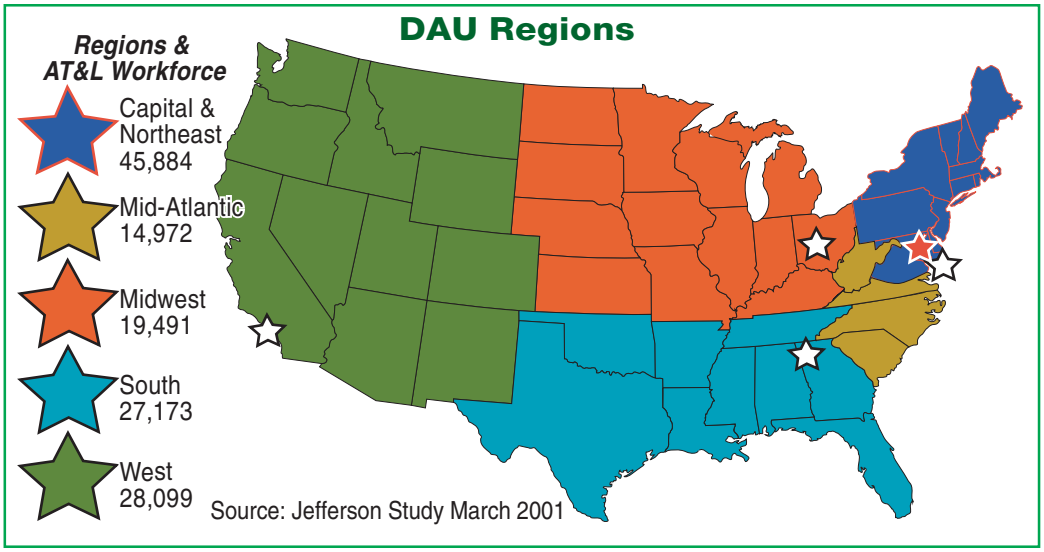
When analyzing the ACE accreditation program, we will examine how many courses have been reviewed and received college credit recommendations, and our backlog of reviewable courses, both resident and online.

5. Create and support individualized pre-assessment in specific courses (an ongoing strategy).

DAU will establish an intelligent tutorial system capable of performing pre-assessments for qualified people who are outside the Program Management career field, who are entering that field and applying for advanced-level equivalency. Through the pretesting process, students will receive individualized determinations of their place in the course structure, based on their personal level of subject understanding. If the student desires to take the entire course, that would also be encouraged.

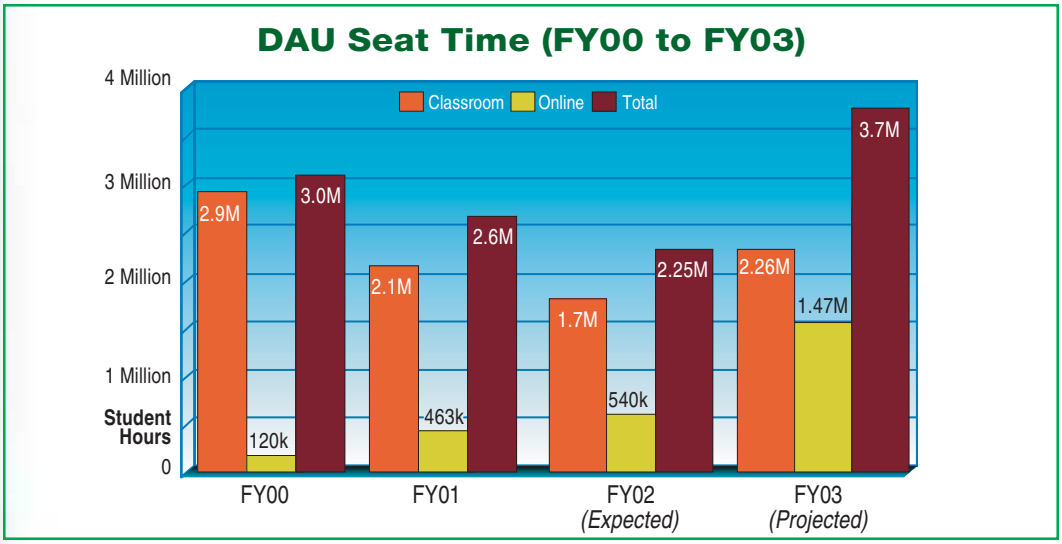
Strategy Measurement

In evaluating the effectiveness of this strategy we will first select a course for implementation, such as PMT-250 or PMT-352; we will complete the development of an intelligent tutor for that courseware; we will calculate how many students complete an assessment; and, we will use data mining technologies to examine the effectiveness of using intelligent tutors as a risk assessment tool and predictor of student failure.



6. Perform a digital content inventory (a one-year strategy).

Our goal is to identify existing current and reusable digital content across a myriad of DAU web-based



and repository sources. In so doing, we will index it by subject and interdisciplinary applications, stating the educational objectives or student performance standards that the content achieves. This will not be isolated to off-the-shelf courseware, video, software and CD-ROM packages but will include Acquisition Deskbook resources and content. It should also recognize the dynamic, interactive and freely available web resources that can be integrated into a curriculum.

This inventory will also become the basis for decisions about building DAU digital repositories. Digital content is available in many reusable forms and can be applied to meet a broad range of DAU goals. The descriptions of the types of digital content and their later meta-tagging will reinforce the flexibility of digital content in our ADL environment.

Strategy Measurement

The completion and analysis of the DAU digital content inventory is the best metric for assessing this type of strategy.

7. Migrate all DAU online courseware to HTML/Javascript (a 3-year strategy).

Keeping with our principle of adopting the SCORM standard, DAU is migrating or converting all of its online courseware to primarily HTML/Javascript. Several of our older courses are written in outdated software applications and must be redesigned to be SCORM- and "Section 508" compliant. In their present state, they are

not friendly to the concept of digital modularization or open access.

By moving to a common style and language, DAU's course managers will be able to make simple courseware updates without going to a major contractor and, thus, further reduce costs and decrease maintenance.

Strategy Measurement
Our goal is to complete the transformation of all online courses into SCORM'd reusable content.

8. Increase our Investment in Digital Content (an ongoing strategy).

DAU must increase the access to high quality digital content to ensure that it is integrated into the curriculum. We strongly believe that 100 percent of instructional materials budgets should be available to develop or purchase the most appropriate content to meet the AT&L workforce educational objectives.

Student learning is enhanced by digital content when it is applied in innovative ways to meet clear educational objectives. Although there is a great deal of interest in using sharable digital content, some faculty report difficulties finding enough time to identify appropriate sources of digital content that fit their needs. Additionally, concerns about the quality of digital content and uncertainty about how to integrate digital content into instruction deter others from transforming their brick and mortar classrooms into digital learning environments.

The effective integration of digital content into our curriculum will require an investment and shared responsibility among all of the DAU stakeholders to provide more and better digital content. While incorporating the ingenuity and creativity of individual teachers, DAU must also procure organized digital content that supports their curriculum guidelines and standards.

DAU will improve our collaboration with our academic and industry partners to build and modify existing products that incorporate the creativity of teachers and the assessment of what works for students and is appropriate for different learning levels. We must also encourage our partners to provide higher quality educational materials.

9. Develop and maintain a Java-based open architecture Learning Management System (a 2-year strategy).

The advent of the Internet and the DAU learning management system (LMS) revolutionized the way our students learn. Students can connect to the DAU web site and take courses online. But, in exchange for the convenience and elimination of the need to travel to a classroom, students are tied to the Internet. They have to be "connected" in order to study online. Access to good bandwidth is the number one complaint when DAU students call the Help Desk (41 percent overall).

Soldiers in the field and civilians in foreign countries have even more problems. In Europe, for example, stu-

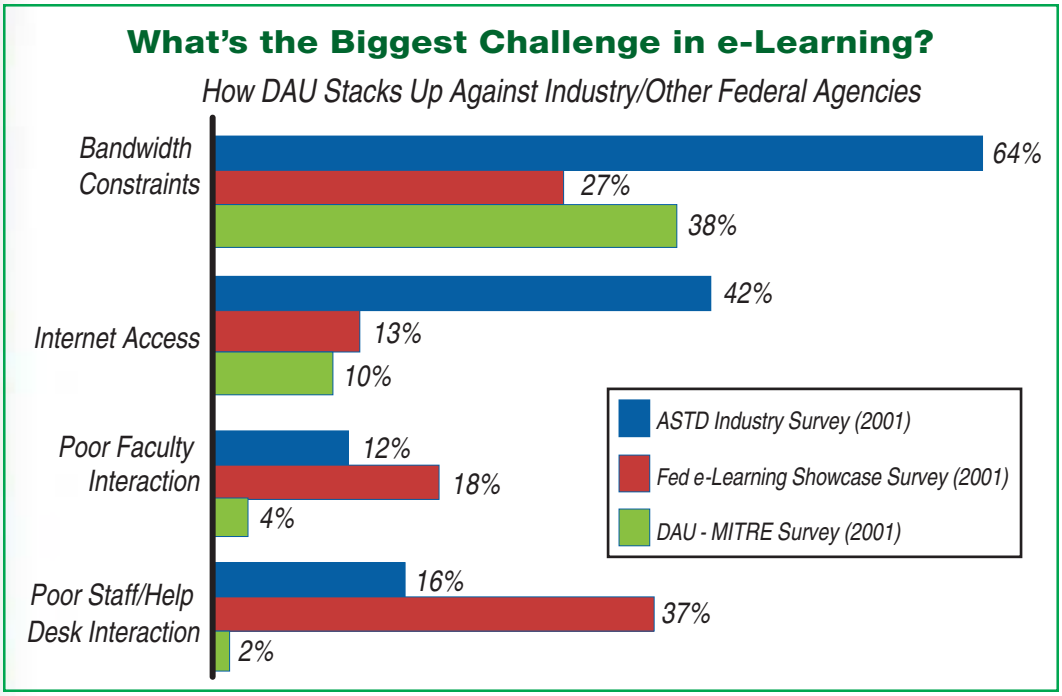
"DAU is one institution that touches nearly every member of the workforce throughout all stages of their professional careers. This is where we revitalize our workforce, while ensuring it has the training it needs to make smart business decisions and deliver for our warfighters."

— Michael W. Wynne
Principal Deputy Under Secretary of Defense (AT&L)

dents must pay for their own connection time. And soldiers, sailors and airmen often work in locations far from any high-speed Internet connections. To solve this problem, which is actually based on local telephone company capabilities, the so-called "last mile," DAU must be bold and dramatically alter the landscape.

DAU is shifting away from our Cold Fusion-based LMS to one that is Java-based. This new LMS carries the same functionality as our previous LMS but adds other desirable features including a more robust evaluation of students' training experience, increased Internet-independence (so-called mobile or "disconnected") learning, HTTP transport protocols and complete Windows compatibility. These additional features will allow DAU students to log into the web site, rapidly download a series of lessons, reading materials, multimedia or tests, and then log off the Internet. The student can then complete each learning component, totally independent of any Internet connection. In fact, it should be impossible to tell the difference between DAU's web-connected courses and those that are disconnected.

The advantages of such an LMS are obvious. Serving over 138,000 members of the AT&L workforce and a growing number of industry participants, DAU students are literally located all over the world. Students who travel could download courses before a trip and have the content available wherever they are located, independently of Internet access. Sailors can continue their studies no matter where they are — above, on or below the sea. Students can save aggravating bandwidth problems and download times by working off-line. Soldiers in the field could take their exams wherever they are located. Then, the next time an Internet connection is available, a click of the



> ***"The only thing that gives an organization a competitive edge … is what it knows, how it uses what it knows, and how fast it can know something new."***
>
> ***— Laurence Prusak IBM***

mouse will synchronize the system, reporting their test scores and downloading the next set of lessons and examinations. This type of functionality will have enormous implications in redefining the way students learn online at DAU and in DoD.

Strategy Measurement
In evaluating this strategy, we will analyze the progress of the LMS implementation plan and conduct a 6-month post-implementation review by the DAU Curricula Development and Support Center.

10. Develop and maintain strategic and implementation plans that will properly reflect the wise use of alternative delivery strategies including satellite, mobile and wireless learning capabilities (an ongoing strategy).

From time to time, the DAU Information Systems Department will modernize or update its facilities and equipment. Similarly, advanced communications technologies studied by the Office of the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence may have a direct impact on our delivery decisions. National security events may preclude the use of certain delivery mechanisms.

A large impediment to fully utilizing the world of educational multimedia (streaming video, audio, and animation) is the inequality of the bandwidths available to students, based on several physical factors. To resolve this inequality and in keeping with good information security practices, DAU is studying varying strategies aimed at providing communications to our students and the DoD community.

Such alternative communications strategies will arise, and opportunities will arise that may enable DAU to enhance its delivery strategies. The sharing of broadband networks with other DoD organizations and the use of satellite technologies, wireless handheld communications, and course delivery are examples. DAU will continue to monitor the state-of-the-art, next-generation technologies as well as the tried-and-true techniques. We will analyze them and provide the optimum choice for their constituency, considering their effect on (1) increasing educational access, (2) reducing time to online access, and (3) reducing DAU costs.

Mobile learning technology now exists in many applications, and where it doesn't exist it is being developed feverishly for the worldwide training market. It solves a huge problem for people who travel or work for periods of time without being able to access their networks.

The second kind of mobile technology is Wireless Wide Area Network (WAN), which allows access to the entire wide area network of the cell phone. So now, even when you leave the campus, you stay connected. Joint Strike Fighter/DAU alumni, for example, could log onto our web site and take advantage of "reach-back" capabilities no matter where they were in the country.

Wireless WAN also solves another piece of the need-to-be-plugged-in problem, by adding the full layer of collaboration and communication tools that Web learning currently boasts. Students and alumni can participate in chats and threaded discussions, post completed assignments, and ask urgent questions of their peers whenever the need arises, wherever they are located.

DAU also needs to incorporate the use of Wireless PAN, or Personal Area Networks. With this wireless technology, learners can create instant, ad hoc networks with any device that happens to be close enough. DAU students or alumni could use their computers, their wireless application protocol (WAP) phones, their Pocket PCs or Palm-based job performance assistants, whatever the device happens to be. The input device seeks out other devices, makes contact, finds out if there's anything worth sharing, and shares it instantly.

Strategy Measurement
Our metric for this strategy will be the completion of our strategic and implementation plans for the introduction of alternative delivery technologies. In addition, we will continue to analyze the nature of related requests for assistance and their resolution at the DAU Help Desk. Our goal is to be able to provide "24/7" assistance and problem resolution for our Workforce community.

11. Create and maintain performance support and learning modules (objects) in accordance with AT&L career field knowledge structures (an ongoing strategy).

A comprehensive set of web-based modules will be developed and continually maintained by DAU faculty and other subject-matter experts, which will tie together all relevant knowledge on the subject and provide context where needed. Elements of the modules will include overviews and hot topics, policy, detailed DAU knowledge sources, frequently asked questions, links to other related modules, continuous learning resources, tools/templates/example documents, best practices, lessons learned, links to other knowledge sources, search, and "Ask an Expert." The modules provide topical knowledge to the Program Management Community of Practice (PM CoP) and will support the transition of present Deskbook "discretionary" information to the new AT&L Knowledge Sharing System. These modules will act as the initial knowledge bases for emerging communities of practice.

Strategy Measurement
The definition of success for this strategy will depend on the number of modules maintained, the number of faculty who are active as module managers, the number of new modules developed in the past year, and the number of modules converted to a CoP.

12. Develop and maintain an Acquisition Support Center (ASCr) "portal" to DAU knowledge objects, DoD communities of practice, experts, tools, best practices, lessons learned, collaboration forums, and team share spaces (an ongoing strategy).

Develop and maintain a public web-based support and reach-back capability for knowledge assets made available through the Internet. Upgrade the ASCr portal and coordinate that upgrade with the DAU web site and other Internet portals.

The Acquisition Support Center and the follow-on AT&L Knowledge Sharing System acts as the principal performance support "work bench" for the AT&L Workforce and as the gateway to DAU's acquisition body of knowledge. The Support Center also provides access to DAU's Virtual Campus for online certification courses and continuous learning courses or learning modules.

Strategy Measurement
The workforce activity in this strategy will come out of a count using "WebTrends" software, examining the depth and number of objects stored in ASCr and evaluating the impact/performance feedback of users through online survey analysis.

13. Develop taxonomies in support of all AT&L career fields (an ongoing strategy).

Process and product breakdown knowledge structures will be developed and continually updated by the CDSC Program Directors for all of the acquisition competencies and career fields. These taxonomies support the development of a digital repository of knowledge, identify topics for performance support and learning modules, provide expertise subject areas for an "Expert Finder" system, and provide content structures for communities of practice. The DAU Program Directors work in concert with the established functional boards to identify common, standard taxonomies.

Strategy Measurement
Success will be based on competency, identified career fields, the numbers and percentages of completed and approved object structures by the respective functional boards.

14. Develop and maintain a DAU digital repository of knowledge objects/products to support certification courses, continuous learning,

communities of practice, and performance support (an ongoing strategy).

DAU will develop and maintain a digital repository of knowledge objects and products to support DAU certification courses, continuous-learning modules, communities of practice, performance-support and the Deskbook. Examples of these objects and products include the contents of the Integrated Curriculum Environment (ICE) database, which can include course materials such as teaching notes, white papers, and PowerPoint presentations, distributed-learning courses, and course lesson modules. They also include performance support and learning modules, courses and course modules for continuous learning credits, case studies, DAU guides, magazine articles, handbooks, toolkits, military research fellows' reports and student-generated reports.

The repository will also house "mandatory" policy documents or pointers to documents issued by the DoD Service Acquisition Executives. The repository will form the knowledge base of the new Deskbook 2002 mandatory policy "system."

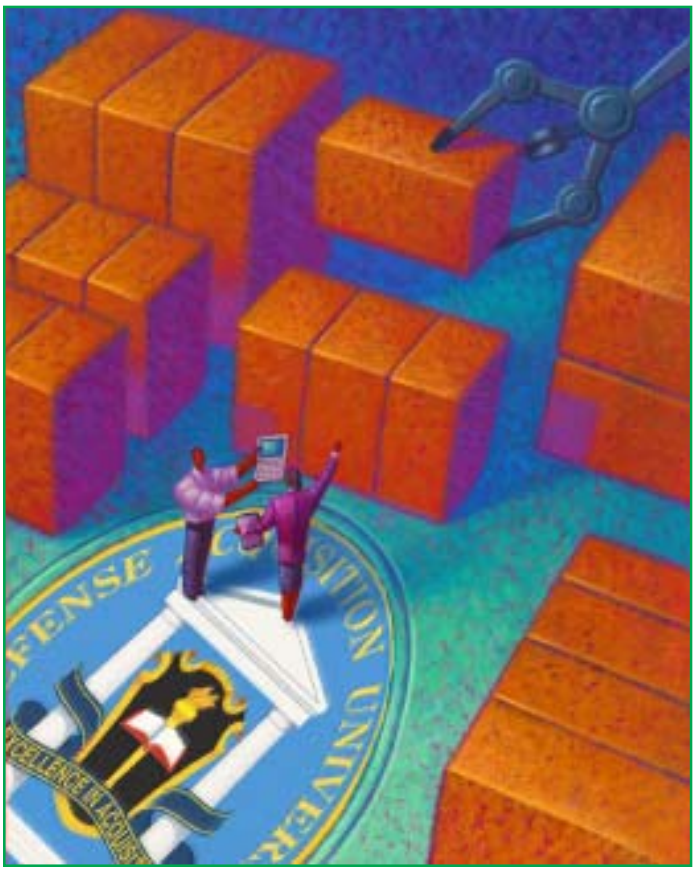
DAU will migrate and/or redesign existing single, Sharable-Content Object (SCO) courseware into multiple SCO courses and elements suitable for placement in a searchable, modular knowledge management (KM) digital repository.

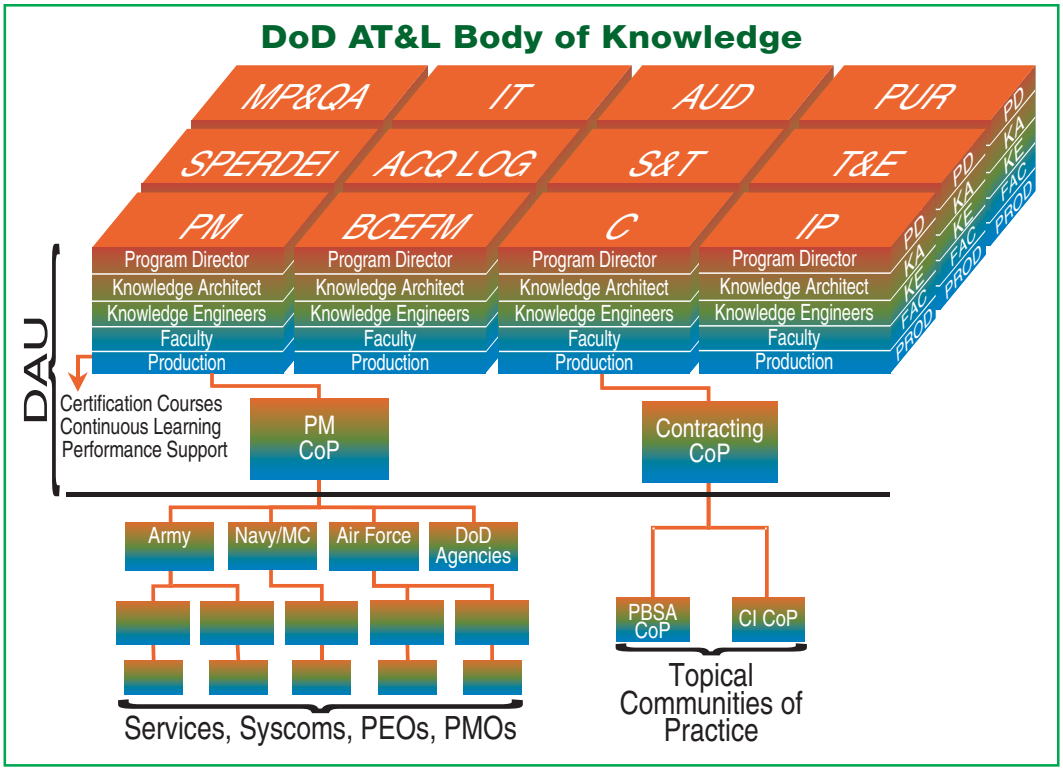
About half of our online courses spring from a common main menu and return to it over and over again as the learner progresses through the course. The ability to create multiple learning "chunks" from these types of online courses is difficult and costly because multiple copies of HTML pages with identical content must be produced.

DAU is modifying these legacy courses into SCORM-conformant ones, but the true value of a digital repository is its unique "chunk-ability."

Strategy Measurement

Our goal is to complete the transformation of all DAU online courses into SCORM'd reusable content. The AT&L Workforce will be able to access these knowledge objects anytime and any-





where in support of a classroom course, as job aids at work, or in support of continuous-learning activities. The reusable knowledge objects in the digital repository will also be accessible through other mechanisms, such as integrated performance support and learning modules and communities of practice.

Success will be formulated through analyzing the number of digital documents stored, the number of objects stored, including all virtual links, and the number of faculty acting as content managers of digital documents/objects.

15. In concert with USD(AT&L), support the transformation of the Defense Acquisition Deskbook into a new Knowledge Sharing System (a two-year strategy).

The first release of the new AT&L Knowledge System will focus on the new Deskbook 2002 reference library for all mandatory acquisition and logistics policies. This release is envisioned for late October 2002. Along with this release, the user will be provided with multiple alternatives to access discretionary information/knowledge. One of the alternatives will be regular access to and search of the documents in the legacy Deskbook 2001, which will have its last update in March 2002. Through the new Deskbook homepage users can also access new discretionary knowledge provided by AT&L Network System members such as the emerging Program Management Community of Practice; DAU's course student materials, continuous learning courses and online performance support modules; and resources identified by the Services, Agencies, OSD, Industry and Academia. This will be an interim system for approximately 3 to 6 months until the second release formally replaces the Deskbook's discretionary information with a distributed and empowered system provided by the AT&L knowledge network.

The second release will focus on the efforts of the AT&L knowledge network to build on the new Deskbook 2002 "mandatory" reference library with their shared knowledge resources. In addition to more discretionary resources being offered to the

"Education over the Internet is going to be so big that it is going to make e-mail usage look like a rounding error."

— John Chambers CEO Cisco, 1999

Workforce, this release will focus on better access tools (knowledge document gateways) and integrating methodologies to minimize the time needed to get to just the right knowledge to support the task at hand.

Follow-on releases will follow a 6-month cycle of feedback, assessment, planning and update to the system. It is envisioned that additional members will continually join the AT&L knowledge sharing network and additional Communities of Practice will stand-up to enrich the system.

Strategy Measurement
Our success will be based on placing the Deskbook 2002 mandatory policy system "online" introducing the new AT&L Knowledge Sharing System "online" and determining the number of different organizations and individuals on the AT&L Knowledge Network.

16. In concert with USD(AT&L), the Services and Defense Agencies, develop and maintain communities of practice for all AT&L career fields and specific sub-focus areas (an ongoing strategy).

KM is essential to the acquisition enterprise. Its decentralized approach will promote and nurture the use of KM and KM assets in CoPs, encourage innovation, and produce results. Proper Workforce incentives accelerate the adoption of a knowledge-sharing culture. Effective centralized portals are needed to link all acquisition knowledge assets. Our knowledge assets will be enriched by connecting people, turning tacit knowledge into explicit and keeping that knowledge current with robust tools, education, and learning.

Today, we have CoP pilots underway. DAU will continue to be proactive in championing CoPs, building on the experiences of the PM CoP, and establish more CoP activities.

Strategy Measurement
Our evaluation metrics will include the number of career field CoPs established "online"; the number of registered members in each CoP; the number of specialized topics/processes each CoP establishes and places online; and, measure CoP activity using WebTrends software.

17. Design, construct, and maintain a library of online courses focusing on continuous learning requirements and job performance assistance in support of DoD AT&L Acquisition Excellence Initiatives (an ongoing strategy).

DAU and its stakeholders are reestablishing a disciplined, systemic process to identify, prioritize and develop continuous learning modules needed by all career fields within the DoD AT&L Workforce. The Office of the Director, Acquisition Initiatives (USD[AT&L/AI]) and DAU are developing the modules using web-based technologies designed to assist the workforce members with job performance, to learn about and implement AT&L initiatives, and adapt to their rapidly evolving functional environment, while furthering their long-term professional development.

"We are witnessing nothing less than the rise of a new economy – a digital economy – and a new global medium that will be the single most important driver of business, economic and social change in the coming century."

— Lou Gerstner
CEO, IBM

Strategy Measurement
Our goal is for DAU to develop at least 12 continuous learning modules per year, for placement on the DAU Continuous Learning Center web site. (http://clc.dau.mil).

18. Develop "Expert Finder" systems for internal DAU use and provide personalized performance support to the AT&L Workforce (an ongoing strategy).

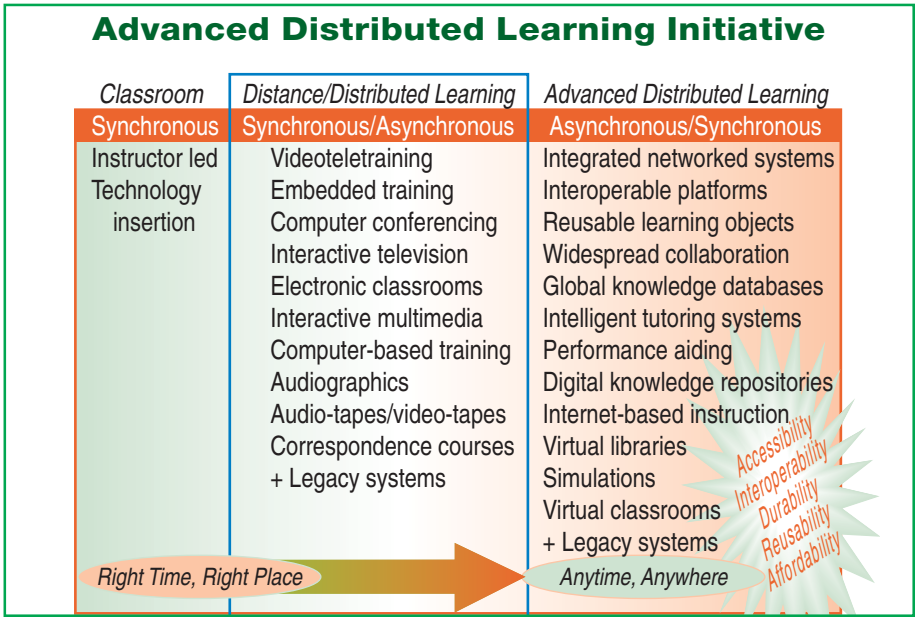
An expert finder system or "Yellow Pages" will provide valuable, personalized service to the Workforce when unique circumstances exist (issue complexity, time criticality, or both) or when specific knowledge on a subject does not yet exist online. An expert finder system will facilitate bringing community members together to discuss and solve problems. Expert finder systems will help "push" hot topics and new knowledge to experts.

Strategy Measurement
Each DAU faculty member will be associated with at least one subject discipline field of expertise. Additional metrics include having at least three identified DAU faculty experts for each discipline we teach. Each task we perform (teaching, facilitating, research, etc.) also has at least two identified DAU faculty experts.

19. Install, develop and exploit the use of a collaborative tool suite, building seminar and enhanced training, just-in-time and job performance assistance (an ongoing strategy).

The calamitous events of 9-11 have changed the face of America. Shortly thereafter, Congress rapidly created changes in the acquisition process. Certain other DoD regulations and instructions were changed to reflect abbreviated procurement models in this time of crisis. It became evident that DAU needs a ready, collaborative training capability where combinations of web-based video, audio, text and graphics can be used to quickly go online and train our workforce on accelerated short topics of critical importance.

Many members of the AT&L community, and the DoD community-at-large, have busy schedules and lives that are entwined with time constraints. This segment of our Workforce often has no time to complete a multi-hour course or session. However, they would have a shorter time period — say, 15 minutes early in the day, along with their coffee — in which they could watch a mini-topic on their desk or handheld computer. Using combinations of web-based video, audio, text and graphics, another goal for DAU is to develop a "Daily Vita-



min" consisting of short encapsulated subjects for the busy learner.

In addition to short AT&L topics, the Daily Vitamin could be used as a way to dispense other information in times where a rapid development is crucial. After the 9-11 disaster, we saw a rush of training requirements almost overnight, addressing topics of immediate concern. This capability could rapidly respond to training requirements and provide training on topics of immediate concern. A dedicated team of existing faculty and staff at DAU could rapidly marshall our capabilities and provide service to the Workforce and DoD.

This same technology could provide DAU with a way of creating web-based seminars (aka *"webinars"*) serving dozens to thousands of online participants. We will be able to capture and replay the contents as functional modules in the Continuous Learning Center. Thus, people who were unable to attend a conference could later view the speeches and lectures, attaining credit toward their required biennial AT&L continuous learning credits.

Strategy Measurement
The establishment of a collaborative toolset and proof of concept projects will be our outcome measurement.

Measurable Tasks and Objectives

The broad-based DAU strategies and implementation plans are divided into several tasks and objectives that will provide a measurable progress chart. These tasks are divided into short-term (within a year), near-term (within two years), midterm (5 year), and long-term (10 year) time periods.

Accomplishments to Date

The following courses have been developed and are currently online:

ACQ 101	Fundamentals of Systems Acquisition Management
ACQ 201	Intermediate Systems Acquisition
BCF 102	Fundamentals of Earned Value Management
BCF 211	Acquisition Business Management
CON 101	Basics of Contracting
CON 104	Principles of Contract Pricing
CON 237	Simplified Acquisition Procedures
IRM 101	Basic Information Systems
LOG 101	Acquisition Logistics Fundamentals
LOG 201	Intermediate Acquisition Logistics
LOG 203	Reliability and Maintainability
PMT 250	Program Management Tools
PMT 352	Program Management Office Course
PQM 101	Production, Quality & Manufacturing Fundamentals
PQM 201	Intermediate Production, Quality & Manufacturing
SAM 101	Basic Software Acquisition
SYS 201	Intermediate Systems Planning, R&D and Engineering
TST 101	Introduction to Acquisition Test & Evaluation

The following courses will be SCORM-conformant in FY02:

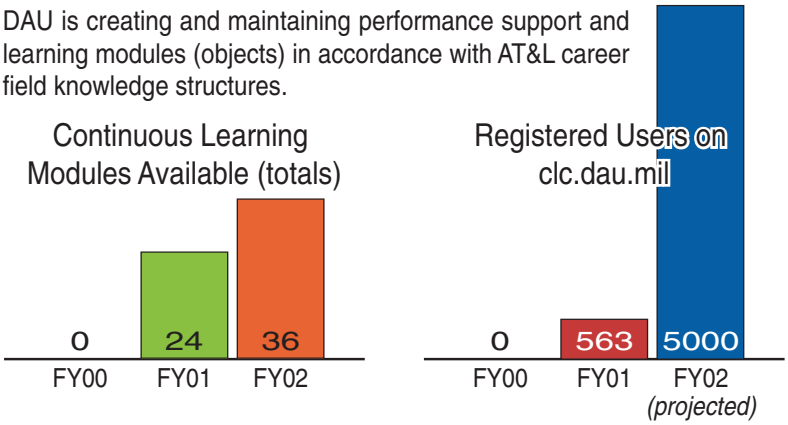
CON 101	Basics of Contracting
CON 237	Simplified Acquisition Procedures
LOG 101	Acquisition Logistics Fundamentals
PMT 352	Program Management Office Course
SAM 101	Basic Software Acquisition

"In this new era of man-made, brain-power industries, those who win will learn to play with new rules requiring new strategies. e-Learning is making skill and knowledge the only sources of sustainable strategic advantage."

— Frank J. Anderson, Jr.
DAU President

DAU e-Learning Strategies

DAU is creating and maintaining performance support and learning modules (objects) in accordance with AT&L career field knowledge structures.



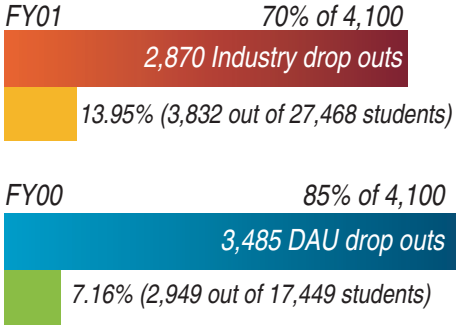
The DAU CLC is extremely popular, with over 3,400 users registered in just nine months. There are numerous continuous learning modules or training opportunities posted at http://clc.dau.mil.

The following Communities of Practice are operational in FY02:. These include:

- Program Management (PM CoP)
- Systems Engineering
- Risk Management
- Total Ownership Cost
- Contract Management (Major Weapons Systems)

How is DAU Doing?

*Comparing DAU to a Recent Industry Drop Out Study***



*** Source: Corp UnivXchangeSurvey (4100 learners, Mar 2002)*

In FY02 DAU implemented a Configuration Control Board (CCB) to properly manage the numerous changes to our LMS system.

The following courses are scheduled for deployment in FY 03:

BCF 102	Fundamentals of Earned Value Management (Revision/SCORM)
BCF 103	Fundamentals of Business Financial Management(Conversion/SCORM)
CON 3xx	A senior-level Contracting course (Hybrid)
LOG 235	Reengineering & Product Support (Hybrid/Collaborative/SCORM)

Short-Term Tasks — FY03

Other short-term tasks of the DAU ADL initiative are to develop and assess ADL prototypes that exploit existing technologies to demonstrate the capability to provide learning on demand (anytime, anywhere), consistent with established core competencies. We will also continue to marry these core competencies with well-developed learning objectives.

In addition, the DAU web site family will be re-engineered and improved to reflect our increased traffic, which has approximated 2,000,000 hits per day.

Additional Communities of Practice will be developed or supported. The following CoPs are planned:

- Contract Management (All career areas) (Oct 02)
- Policy (Nov 02)
- Earned Value Management (Nov 02)
- Acquisition Logistics Management (Dec 02)

- Software Acquisition Management (Sep 03)
- International Project Management (Sep 03)
- Lean Management/Enterprise (Sep 03)

Five Faculty Professional Development in Education (FPDE) online courses are scheduled for deployment in FY03:

FPDE 3	Measuring Student Performance: Developing Written Test Items
FPDE 8	Facilitating Online Learning
FPDE 10	Basic Research
FPDE 14	Learning Management Systems Training
FPDE 15	e-Mentoring

Four FPDE hybrid courses are scheduled for FY03:

FPDE 6	Measuring Student Performance: Assessing Student Outcomes
FPDE 7	Understanding Problem-Based Learning
FPDE 11	Intermediate Research
FPDE 12	Advanced Research

Long-Term Goals and Objectives

DAU's major goal is to field a total package of e-Learning and knowledge management tools that will include all three components of the DAU ADL initiatives: infrastructure, learner interface, and content.

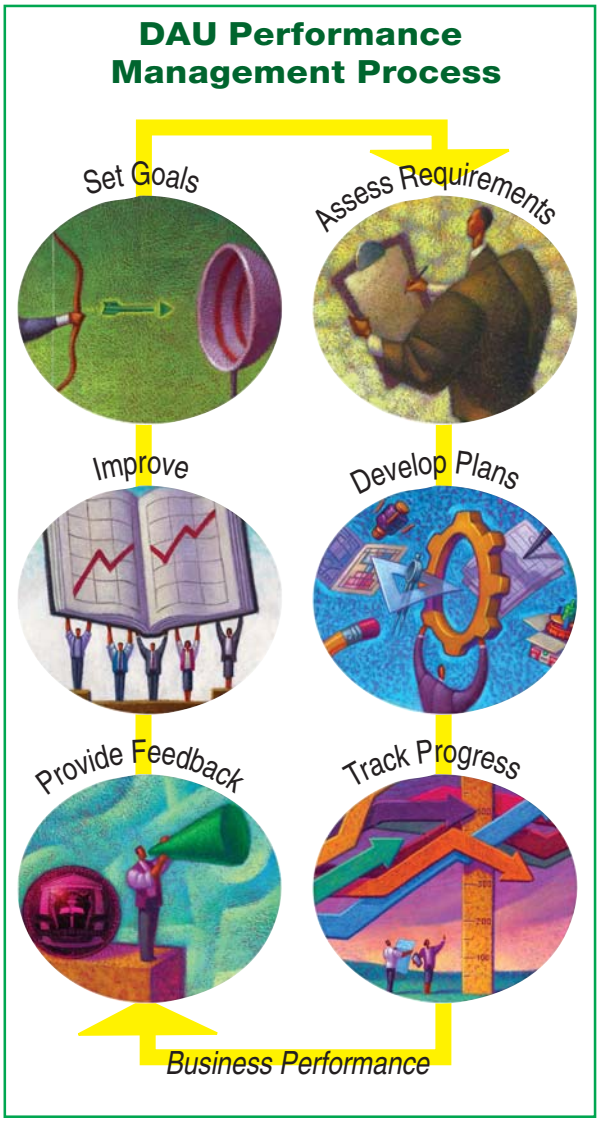
These components are the keys to our long-term vision at DAU. They include implementation of a fully functioning e-Learning system that supports a wide range of learning needs while reducing costs and in-

"What's my Return on Investment on e-Learning? Are you crazy? This is Columbus in the New World. What was his ROI?"

— Andrew Grove
Intel Chairman

The following DAU Initiatives are planned for FY03 (Contingent on Funding)

- Re-engineer the "e-Learning Orientation" modules (CDSC)
- Restructure the Contracting (CON) career field, including reengineering of CON 101 and CON 104 courses (CDSC)
- Revise both ACQ 101 and LOG 101 to reflect SCORM and Section 508 standards (CDSC)
- Continue to retrofit legacy online courseware to make it more accessible to all members of the AT&L workforce (CDSC)
- Increase registered users on the Continuous Learning Center (CLC) to over 6,000 (CDSC)
- Develop at least 12 continuous learning modules for the CLC (CDSC)
- Transition the online Acquisition Deskbook to a new AT&L knowledge sharing system (CDSC)
- Perform a digital content inventory of all DAU content, including the Acquisition Deskbook (CDSC)
- Create a digital repository for the storage of reusable content and learning objects (CDSC)
- Continue the implementation of assessment and reporting mechanisms for risk measurement, predictive analysis and the learner experience (Provost)
- Continue our Learning Management Systems transition from Cold Fusion to Java (CDSC)
- Create a "Courseware Transition Plan" from Cold Fusion to Java (CDSC)
- Update all Content Documentation and Style Guides to reflect new ADL standards (CDSC)
- Migrate the Help Desk to the Fort Belvoir campus and improve customer assistance to 24/7 coverage (IT/CDSC/OPS)
- Study and plan the implementation of a national mobile delivery system for "reach-back" functionality (CDSC)
- Develop an Intelligent Tutor to assist in a DAU "pre-test" and predictive analysis process for students entering the AT&L Workforce from non-DoD agencies (Provost)



creasing Workforce effectiveness, based on the requirements of prioritization and funding availability. These keys include:

- Applicable online courseware to be fully SCORM'd by the end of FY 04;
- Increased emphasis on "just-in-time" performance support;
- Increased use of analytical tools and predictive risk management;
- Coordinating distributed subject-matter experts and courseware;
- Sharing real-time, in-depth learning management; and
- Delivering support tools in a responsive, top-quality "learner-centric" system.

How Will We Measure Success?

In order to understand and improve the DAU learning experience, it is necessary to measure it. "The learner experience" largely consists of the ability to connect to a DAU web site, the speed with which pages or lessons are loaded, the ease or difficulty of finding what they want, and the entire process of acquiring knowledge.

DAU will continue to expand its range of tools to address questions like: Where are our e-learners located? Where on our sites do they go? Why do they leave? And how often do they come back?

These web analytical tools range from simple web log analysis programs to more complex data mining analytical packages. Such "Click Stream Analysis" is as important for the DAU IT team as it is for the curriculum development team in planning content delivery options. Web analytics will be invaluable tools for understanding learner behavior to refine and improve DAU's offerings.

DAU will continue to examine student satisfaction in regard to their online experience. Benchmarks such as course design effectiveness, ease of use, and faculty support to the student will be measured to determine success of our courses.

DAU is committed to providing the highest quality education and training to members of the AT&L Workforce and to ensure that customer requirements are fulfilled through our courses. To obtain this goal, the DAU must strive to continuously monitor and improve our courses through the use of quantitative and qualitative input from our customers. We project that quarterly audits of our course materials will ensure a "refreshment" of their content.

DAU's Future in e-Learning and Workforce Performance

The Future of e-Learning at DAU

In today's fast changing world, and especially in e-Learning where Advanced Distributed Learning (ADL) advances create new opportunities in rapid succession, predicting the future, beyond 3 to 5 years, is difficult. Most futurists now employ scenarios to predict possible futures for which organizations can plan. The potential of e-Learning at DAU will depend on several factors.

Some people believe that e-Learning will be the predominant form of education and training in the future. But, for the foreseeable future, our University will continue to host a substantial on-campus population, roughly 60 percent of over 50,000 DAU enrollments each year. However, the majority of our growth will be in e-Learning opportunities. This will be forced by a DoD leadership mandate, learner choice and economic realities. As we enroll more career fields in the AT&L Workforce, the total student enrollments, both on-campus and online, will continue to increase. By planning to position our University for different possible futures, we will assure continuing support and growth.

Lifelong Learning through DAU

DAU ADL-based lifelong learning will continue to grow because learners find it offers several advantages:

- Accessibility from remote locations;
- Convenience;
- A broadened pool of opportunities;
- Improved Performance; and,
- More efficient use of time.

It has been predicted that the average adult's worklife in the future will consist of 6 or 7 careers carried out sequentially. Lifelong learning is becoming a necessity rather than the enrichment opportunity it may have been in the past. AT&L students are looking for courses and professional development tools that improve both their lives and career skills.

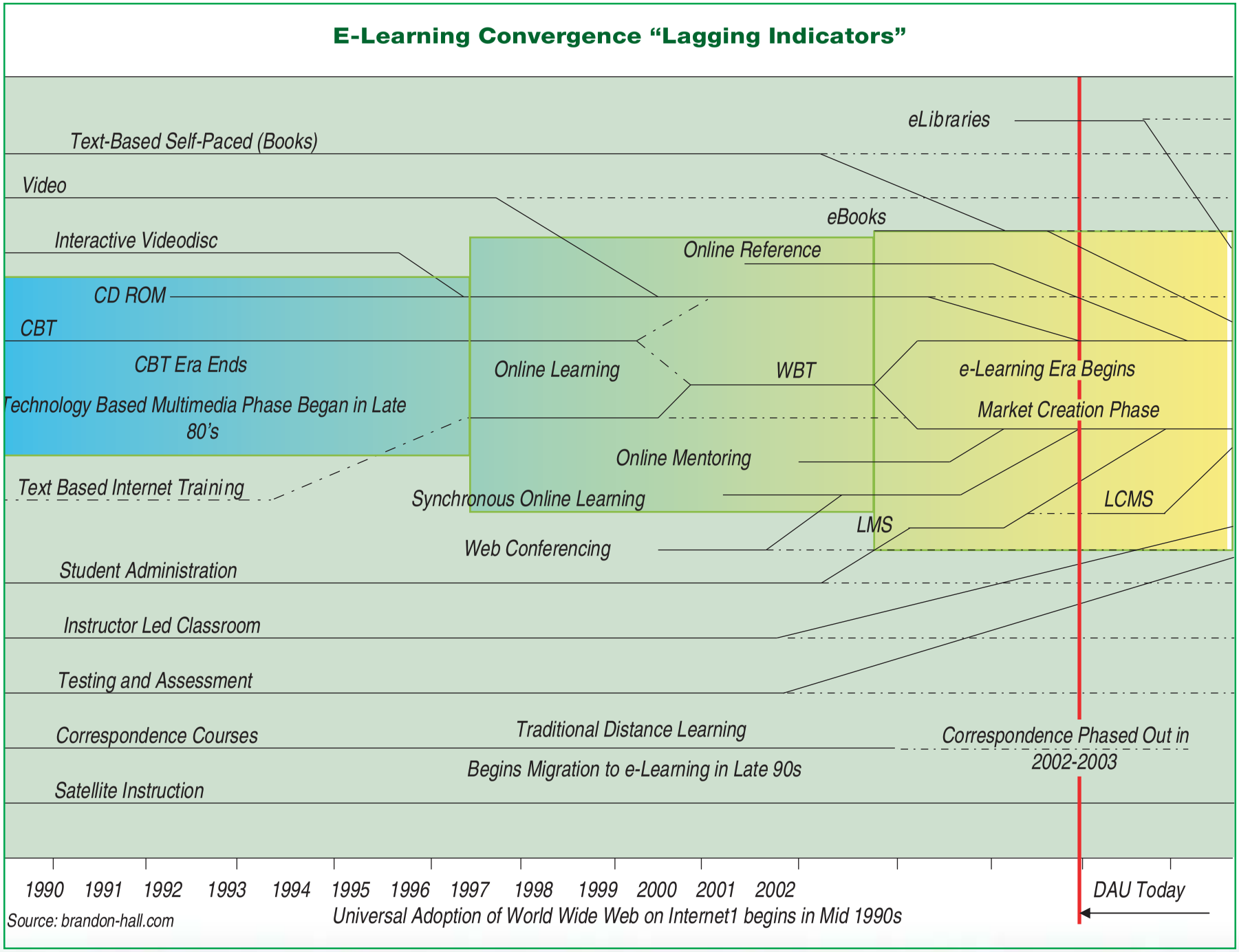
The Effect of Globalization

The impact of globilization will lead DAU to continuing its emphasis on creating new partnerships for research and teaching with organizations across the United States. Another aspect of globilization, especially in communications technology, is the increased permeability of organizational and political boundaries. The use of new educational technologies will only serve to foster the removal of boundaries imposed on learning.

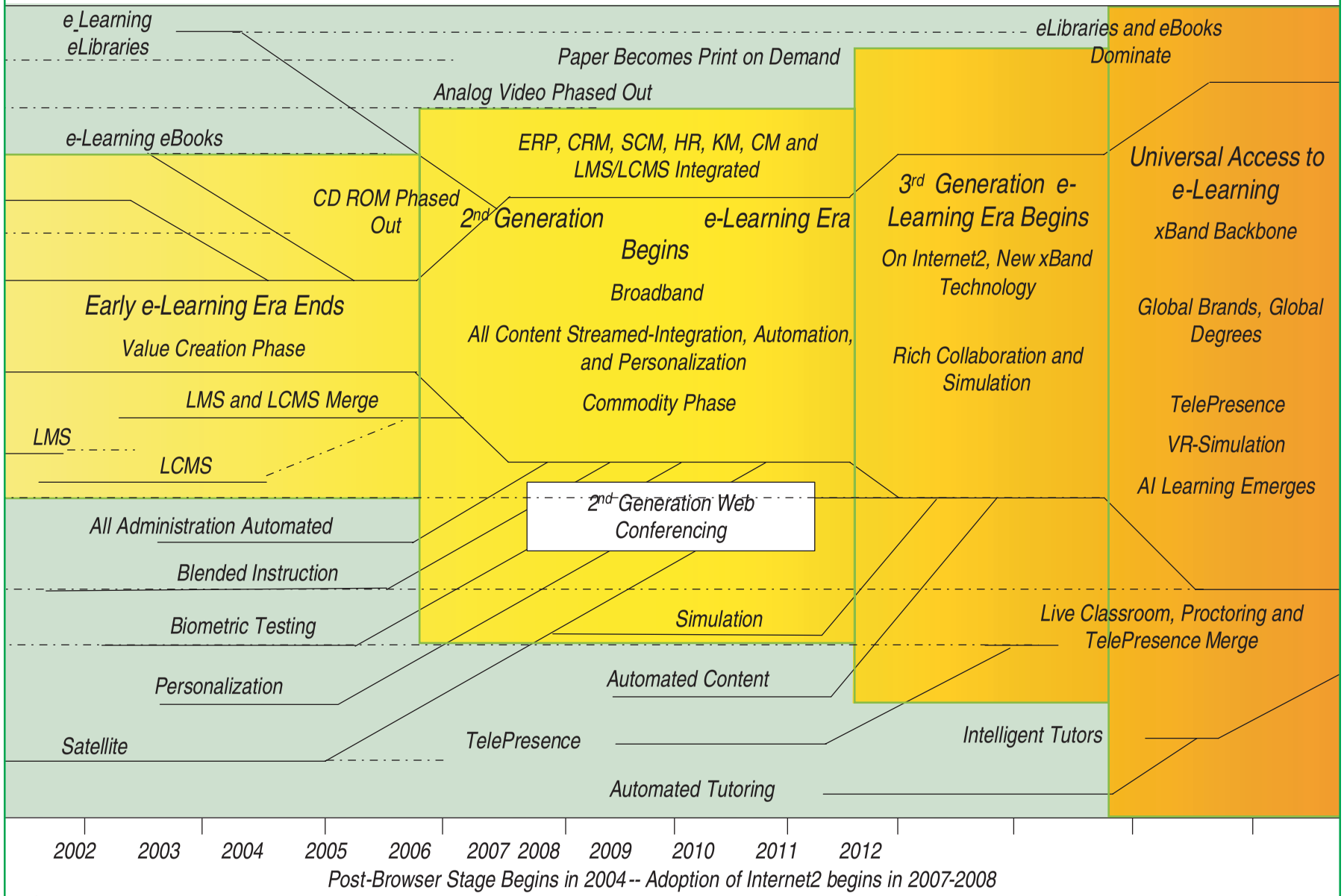
Teleworking

Another aspect of restructuring in the Federal workforce is Teleworking. It is already influencing the way we deliver education and training, in that

> ***"Manufacturing productivity increased 50-fold in the 20th century … knowledge worker productivity must make similar increases."***
>
> ***— Peter Drucker***


E-Learning Convergence "Lagging Indicators"
eLibraries
Text-Based Self-Paced (Books)
Video
eBooks
Interactive Videodisc
Online Reference
CD ROM
CBT
CBT Era Ends
Online Learning
WBT
e-Learning Era Begins
Technology Based Multimedia Phase Began in Late 80's
Market Creation Phase
Online Mentoring
Text Based Internet Training
Synchronous Online Learning
LCMS
LMS
Web Conferencing
Student Administration
Instructor Led Classroom
Testing and Assessment
Correspondence Courses
Traditional Distance Learning
Correspondence Phased Out in 2002-2003
Begins Migration to e-Learning in Late 90s
Satellite Instruction
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002
DAU Today
Source: brandon-hall.com
Universal Adoption of World Wide Web on Internet1 begins in Mid 1990s

E-Learning Convergence "Lagging Indicators"



Post-Browser Stage Begins in 2004 -- Adoption of Internet2 begins in 2007-2008

Source: brandon-hall.com

"Knowledge Management promotes an integrated and collaborative approach to the creation, capture, organization, access, and use of an enterprise's information assets. These assets include documents, databases, spreadsheets, and other information sources and the tacit expertise, insight, and experiences of individual employees."

Source: Gardner Group

about 20 percent of our students take courses through home Internet access via standalone 56k modems, cable TV modems or DSL subscriptions. There is little reason to expect that use of these penetrating technologies will decrease. As they proliferate the home with expanded capacities, the number of teleworkers will continue to increase. DAU will continue to see a move away from site-based delivery of education and training toward more flexible, learner-selected options.

Accountability

Control of costs, elimination of duplication (and in some cases, unique options perceived to be too costly) and evidence of other efficiencies will continue to receive heightened attention from our stakeholders. Similarly, demands for greater productivity in education and training will continue to be heard more than at anytime in the past. Using our "e-Business model" with its emphasis on "the bottom line," we will also see demand for greater student productivity, with attention to such measures as contact hours and seat time, along with the traditional faculty productivity requirement.

In addition, our students have become much more sophisticated. They look for accountability, but they also seek quality. They are more likely to define quality in the language of satisfaction of their real-world needs, rather than in the traditional measures of resources as represented by the size of libraries and staff-to-student ratios.

The symbiotic interplay between knowledge in the abstract and real-world consequences — as equal partners — will distinguish learning at DAU. Knowledge for the sake of knowledge will have little place in DAU's future. This will be the minimum standard of knowledge in the Internet Age, not the maximum. The maximum will call for demonstrably and positively helping to advance understanding and the quality of life.

Communities of Practice

DAU has seen firsthand, through our Communities of Practice concept, that there is a growing interest in communities, particularly in how we can recapture the sense of belonging that some perceived has been lost in a workforce that has over 138,000 members and more than a dozen career fields. We have seen questions over the fragmentation that seems to come with greater specialization. In the future, DAU will continue to use interdisciplinary research and teaching as well as faculty teams to create a new sense of community. As thousands of older members of our workforce retire in the next few years, they will be replaced by younger 'Generation Net' learners who have intimate knowledge and experiences with the Internet, gaming and simulation learning. They are looking for such community and by the very nature of their presence, will demand that DAU continually improve our delivery and content.

Taking Away the "e" in "e-Learning"

In any future DAU scenario, the line between e-Learning and technology-

supported classroom learning will continue to blur. Consider a ballpoint pen. It is a tool, a useful instrument by which we achieve things. At some point in time, we forget the nature of the pen and ignore it, concentrating only on the context in which we use it.

Likewise, as we continue to expand the role of ADL and educational technology, DAU will see a point when the spanning of distance becomes secondary to the learning taking place, thus removing the "e" from the term "e-Learning." All DAU courses, whether in class or on a virtual campus will be, to some extent, technology-supported learning. All will use appropriate technology to meet the current and future needs of the student.

A Call To Action

e-Learning has enabled and forced a paradigm shift at DAU. We have recognized that today's Industrial Age education model is not appropriate for the e-Learning needs of the Internet Age. DAU will continue to be proactive and not reactive to future educational needs of the AT&L Workforce. We will continue to foster leadership from the highest levels, through each of our campuses and from the bottom-up, to improve our University and meet rising expectations.

In the next decade, we will continue to see the expansion of current technologies applied to e-Learning such as Internet II, ultra-high speed wireless connections and improved media technologies such as head-mounted or handheld displays, tactile gloves, all-digital libraries, improvements on information storage (with the contents of the entire Library of Congress held on a single one-inch thick videodisc), voice recognition and virtual 3-D holographic classrooms. We will continue to see DAU enrollments rise, faculty retire, buildings needing replacement, and new technologies change the very way we teach.

Information available to humankind will double several times a year. As a result of our early efforts in Intelligent Tutoring, an "on demand" or cafeteria approach will characterize our learning delivery. Subject matter will continue to be increasingly modularized with specific learning outcomes. Students will learn how to function in group problem-solving situations from the very beginning. Just-in-time instruction will permit unprecedented learning within an application.

Smart changes are built on quality. DAU resolves not to be a quaint place where time stops as the world goes by. As we respond to the demands of our Workforce, the Internet Age holds a wide variety of opportunities for DAU growth, exciting discoveries and service.

E.C. "Pete" Aldridge, Jr.
Under Secretary of Defense
(AT&L)

Michael W. Wynne
Principal Deputy Under Secretary
of Defense

"I am particularly impressed with the [DAU] strategy-driven customer focus; the case-based training; and, of course, the strategic alliances that you've cultivated across all the universities, industry, and elsewhere."

—E.C. "Pete" Aldridge, Jr.

"DAU is the one institution that touches nearly every member of the workforce throughout all stages of their professional careers. This is where we revitalize our workforce, while ensuring it has the training it needs to make smart business decisions and deliver for our warfighters."

—Michael W. Wynne

July 2002

Visit us at http://www.dau.mil

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